This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) An inline optical amplifier station for an optical transport system, the inline optical amplifier station comprising:

a first optical coupler/decoupler configured to decouple a first bidirectional signal and a first service channel signal from a first fiber span signal;

a second ~~first~~ optical coupler/decoupler configured to ~~separate from a first bidirectional signal~~ decouple a first data signal propagating in a first direction[[,]] from the first bidirectional signal and ~~configured~~ to combine a second data signal propagating in a second direction ~~into~~ with the first bidirectional signal;

a third ~~second~~ optical coupler/decoupler configured to ~~separate from a second bidirectional signal~~ decouple a third data signal propagating in the second direction[[,]] from a second bidirectional signal and ~~configured~~ to combine a fourth data signal propagating in the first direction ~~into~~ with the second bidirectional signal;

a first optical attenuator configured to receive the first data signal from the second ~~first~~ optical coupler/decoupler;

a second optical attenuator configured to receive the third data signal from the third ~~second~~ optical coupler/decoupler;

a first optical coupler configured to combine the first and third data signals ~~from the first and second optical attenuators, respectively, into~~ to produce a combined signal;

a first optical amplifier configured to co-directionally amplify the combined signal; and

a first optical decoupler configured to ~~separate~~ decouple the second and fourth data signals from the combined ~~co-directionally amplified~~ signal ~~into the second and fourth signals~~.

2. (Previously presented) The inline optical amplifier station of claim 1 wherein the first optical amplifier comprises a multistage amplifier.

3. (Currently amended) The inline optical amplifier station of claim 1 wherein the first optical amplifier comprises a first stage and a second stage, and wherein the first stage ~~is configured to produce a first intermediate combined co-directionally amplified signal~~ and the second stage ~~is configured to produce the combined co-directionally amplified signal~~ are each configured to co-directionally amplify the combined signal.

4. (Previously presented) The inline optical amplifier station of claim 3 further comprising a third optical attenuator connected between the first stage and the second stage.

5. (Previously presented) The inline optical amplifier station of claim 3 further comprising a dispersion compensator connected between the first stage and the second stage.

6. (Previously presented) The inline optical amplifier station of claim 4 wherein the first, second and third optical attenuators each comprise a variable optical attenuator.

7. (Currently amended) The inline optical amplifier station of claim 1 wherein the fourth data signal and the second data signal comprise different wavelengths in two separate bands.

8. (Currently amended) The inline optical amplifier station of claim 1 wherein the fourth data signal and the second data signal are interleaved on separate channels.

9. (Currently amended) The inline optical amplifier station of claim 1 further comprising a fourth optical coupler/decoupler configured to decouple the second bidirectional signal and a second service channel signal from a second fiber span signal ~~third coupler/decoupler connected to the first coupler/decoupler, wherein third coupler/decoupler is configured to combine a third bidirectional signal with the first bidirectional signal into a fourth bidirectional signal~~.

10. (Canceled)

11. (Currently amended) The inline optical amplifier station of claim 1 further comprising a fourth optical ~~third~~ coupler/decoupler connected to the third optical ~~second~~ coupler/decoupler, wherein the fourth optical ~~third~~ coupler/decoupler is configured to combine ~~a third bidirectional signal with the second bidirectional signal into a fourth bidirectional signal~~ the second bidirectional signal with a second service channel signal to produce a second fiber span signal.

12. (Currently amended) The inline optical amplifier station of claim 1 ~~10~~ wherein the first ~~optical~~ service channel signal is in a separate wavelength range from the ~~fourth~~ first data signal and the second data signal.

13. (Canceled)

14. (Currently amended) The inline optical amplifier station of claim 11 ~~13~~ wherein the ~~control~~ second service channel signal is in a separate wavelength range from ~~both~~ the ~~fourth~~ third data signal and the ~~second~~ fourth data signal.

15. (Currently amended) The inline optical amplifier station of claim 1 wherein the inline optical amplifier station is configured to receive the first fiber span signal from ~~9 further comprising~~ a first terminal ~~connected to the third coupler/decoupler, wherein the terminal is configured to transmit and receive the fourth bidirectional signal~~.

16. (Currently amended) The inline optical amplifier station of claim 15 ~~11~~ wherein the inline optical amplifier station is configured to receive a second fiber span signal from ~~further comprising~~ a second terminal ~~connected to the third coupler/decoupler, wherein the terminal is configured to transmit and receive the fourth bidirectional signal~~.

17-22. (Canceled)

23. (Currently amended) The inline optical amplifier station of claim 4 further comprising:

a second optical decoupler connected to the third optical attenuator, wherein the second optical decoupler is configured to ~~separate~~ decouple a first uncompensated signal and a second uncompensated signal from an output of the third optical attenuator ~~the first intermediate combined co-directionally amplified signal into a first uncompensated signal and a second uncompensated signal~~;

a first dispersion compensation module connected to the second optical decoupler, wherein the first dispersion compensation module is configured to compensate for dispersion in the first uncompensated signal ~~into~~ to produce a first compensated signal;

a second dispersion compensation module connected to the second optical decoupler, wherein the second dispersion compensation module is configured to compensate for dispersion in the second uncompensated signal ~~into~~ to produce a second compensated signal; and

a second optical coupler connected to the first and second dispersion compensation modules, wherein the second optical coupler is configured to combine the first and second compensated signals ~~into a second intermediate combined co-directionally amplified signal~~.

24. (Currently amended) The inline optical amplifier station of claim 1 further comprising an optical element connected between the first optical amplifier and the first optical decoupler, wherein the optical element is configured to ~~modify~~ operate on the combined ~~co-directionally amplified~~ signal before the combined ~~co-directionally amplified~~ signal is decoupled by the first optical decoupler.

25. (Previously presented) The inline optical amplifier station of claim 24 wherein the optical element comprises an optical add/drop multiplexer.

26. (Previously presented) The inline optical amplifier station of claim 24 wherein the optical element comprises a dynamic gain equalizer.

27. (Previously presented) The inline optical amplifier station of claim 24 wherein the optical element comprises a second optical amplifier.

28. (Previously presented) The inline optical amplifier station of claim 24 wherein the optical element comprises a dynamic band equalizer and a second optical amplifier.

29. (Previously presented) The inline optical amplifier station of claim 24 wherein the optical element comprises an optical add/drop multiplexer and a second optical amplifier.

30. (Currently amended) The inline optical amplifier station of claim 1 wherein the first optical attenuator comprises a first variable optical attenuator,

wherein the second optical attenuator comprises a second variable optical attenuator, and

wherein the first variable optical attenuator and the second variable optical attenuator are configured to be adjusted to equalize a power of the first data signal with respect to the third data signal.

31. (Currently amended) A method for amplifying an eastbound data signal and a westbound data signal in an optical transport system, the method comprising:

isolating a first bidirectional signal and a first service channel signal from a first fiber span signal;

isolating the eastbound data signal from [[a]] the first bidirectional signal;

isolating the westbound data signal from a second bidirectional signal;

power matching the eastbound ~~signal~~ and ~~the~~ westbound data signals to produce power-matched signals;

combining the power-matched ~~eastbound and westbound~~ signals to produce a combined signal; and

co-directionally amplifying the combined ~~eastbound and westbound~~ signal[[s]] to produce an amplified signal.

32. (Currently amended) The method of claim 31 further comprising compensating for dispersion ~~in at least one of the co-directionally amplified eastbound and westbound signals~~ in the amplified signal.

33. (Currently amended) The method of claim 31 further comprising attenuating the ~~co-directionally amplified eastbound and westbound signals~~ amplified signal.

34. (Currently amended) The method of claim 31 further comprising:

isolating ~~the co-directionally~~ an amplified eastbound data signal from the amplified signal;

isolating ~~the co-directionally~~ an amplified westbound data signal from the amplified signal;

compensating for dispersion in the ~~co-directionally~~ amplified eastbound data signal;

compensating for dispersion in the ~~co-directionally~~ amplified westbound data signal; and

combining ~~recombining~~ the ~~co-directionally~~ amplified eastbound data signal and the ~~co-directionally~~ amplified westbound data signal.

35-48. (Canceled)

49. (Currently amended) The inline optical amplifier station of claim 1 wherein the first data signal comprises an unamplified eastbound signal,

wherein the second data signal comprises an amplified westbound signal,

wherein the third data signal comprises an unamplified westbound signal, and

wherein the fourth data signal comprises an amplified eastbound signal.

50. (Previously presented) The inline optical amplifier station of claim 1 wherein the first and second optical attenuators each comprise a variable optical attenuator.

51. (Canceled)

52. (Currently amended) The method of claim 31 further comprising isolating ~~the co-directionally~~ an amplified eastbound data signal and an amplified westbound data signal[[s]] from the amplified signal.

53. (Currently amended) The method of claim 52 further comprising combining the ~~co-directionally~~ amplified eastbound data signal with the second bidirectional signal and combining the ~~co-directionally~~ amplified westbound data signal with the first bidirectional signal.

54. (Currently amended) The method of claim 34 wherein dispersion in the ~~co-directionally~~ amplified eastbound data signal is compensated independent of the dispersion in the ~~co-directionally~~ amplified westbound data signal.

55. (Currently amended) An inline optical amplifier station for an optical transport system, the inline optical amplifier station comprising:

means for isolating a first bidirectional signal and a first service channel signal from a first fiber span signal;

means for isolating an eastbound data signal from [[a]] the first bidirectional signal;

means for isolating a[[n]] westbound data signal from a second bidirectional signal;

means for power matching the eastbound ~~signal~~ and ~~the~~ westbound data signals to produce power-matched signals;

means for combining the power-matched ~~eastbound and westbound~~ signals to produce a combined signal; and

means for co-directionally amplifying the combined ~~eastbound and westbound~~ signal[[s]] to produce an amplified signal.

56. (Currently amended) The inline optical amplifier station of claim 55 further comprising means for compensating for dispersion ~~in at least one of the co-directionally amplified eastbound and westbound signals~~ in the amplified signal.

57. (Currently amended) The inline optical amplifier station of claim 55 further comprising means for attenuating the ~~co-directionally amplified eastbound and westbound signals~~ amplified signal.

58. (Currently amended) The inline optical amplifier station of claim 55 further comprising:

means for isolating ~~the co-directionally~~ an amplified eastbound data signal from the amplified signal;

means for isolating ~~the co-directionally~~ an amplified westbound data signal from the amplified signal;

means for compensating for dispersion in the ~~co-directionally~~ amplified eastbound data signal;

means for compensating for dispersion in the ~~co-directionally~~ amplified westbound data signal; and

means for ~~recombining~~ combining the ~~co-directionally~~ amplified eastbound data signal and the ~~co-directionally~~ amplified westbound data signal.

59. (Currently amended) The inline optical amplifier station of claim 55 further comprising means for isolating ~~the co-directionally~~ an amplified eastbound data signal and ~~means for isolating the co-directionally~~ an amplified westbound data signal from the amplified signal.

60. (Currently amended) The inline optical amplifier station of claim 59 further comprising means for combining the ~~co-directionally~~ amplified eastbound data signal with the second bidirectional signal and means for combining the ~~co-directionally~~ amplified westbound data signal with the first bidirectional signal.

61. (Currently amended) The inline optical amplifier station of claim ~~55~~ 58 wherein dispersion in the ~~co-directionally~~ amplified eastbound data signal is compensated independent of the dispersion in the ~~co-directionally~~ amplified westbound data signal.

62. (New) The method of claim 31 further comprising isolating the second bidirectional signal and a second service channel signal from a second fiber span signal.

63. (New) The inline optical amplifier station of claim 55 further comprising means for isolating the second bidirectional signal and a second service channel signal from a second fiber span signal.